IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Klaus Oldermann, et al.
Filed: Herewith
For: DISK DRIVE WITH COMPENSATION OF DISK ECCENTRICITY

PRELIMINARY AMENDMENT

Hon. Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination and calculation of fees in the divisional application filed herewith, please enter the following Preliminary Amendment and the accompanying remarks.

IN THE CLAIMS

Please cancel claims 1, 3, 5-7 and 17, amend the claims as indicated below, and add new claims 18-20 as follows. A marked up version of the amended claims, indicating the additions and deletions is attached herewith.

2. (Amended) A device for rotating inside of a disk player and/or recorder a disk shaped data carrier having an opening around a center of said disk shaped carrier, said device comprising:

fixing means for removably fixing said data carrier by inserting a part of said fixing means in said opening, said fixing means having a rest position associated therewith;

driving means for rotating said data carrier by acting on said fixing means;

side moving means for allowing said fixing means to rotate about an axis of said rest position on a rotation plane substantially perpendicular to an axis of rotation of said fixing means; and

scanning means for scanning said data carrier, said scanning means being mechanically connected to said disk player and/or recorder such that

said axis of rotation of said fixing means is able to move relative to said scanning means when said fixing means rotates about said axis of said rest position, wherein said side moving means comprises

sliding means for allowing said driving means to move inside said player and / or recorder along directions which are parallel to said rotation plane, and

elongation means fixed at one end to said player and / or recorder and at another end to said driving means, such that said driving means is in a rest position when said driving means is not driving said data carrier.

4. (Amended) The device according to claim 2 wherein said side moving means comprises first bearing means, said first bearing means being mounted on said fixing means, and said disk and/or recorder comprises a supporting surface disposed parallel to said rotation plane, such that said first bearing means allows said fixing means to slide on said supporting surface while said fixing means is rotating.

8. (Amended) The device according to claim 2, wherein said side moving means comprises

a sliding support having a drive opening through which said driving means acts on said fixing means,

and said disk player and / or recorder comprises

a supporting surface disposed parallel to said rotation plane, such that said sliding support slides on said supporting surface,

said fixing means further comprising

an elongated part fitted through said drive opening together with a second bearing means which allow said elongated part to rotate inside said drive opening,

and said driving means comprising

a rotor magnet mounted on said elongated part and a stator electro-magnet mounted on said player and / or recorder such that said rotor magnet

and said stator electro-magnet cooperate as an electric motor,

said device further comprising

centering means for positioning said fixing means in a central position when said driving means stops driving said data carrier.

9. (Amended) A device for rotating inside of a disk player and / or recorder a disk shaped data carrier having an opening around a center of said disk shaped carrier, said device comprising:

fixing means for removably fixing said data carrier by inserting a part of said fixing means in said opening, said fixing means comprising an elongated part;

driving means for rotating said data carrier by acting on said fixing means, said driving means being at least partly mechanically connected to said disk player and / or recorder, and said driving means comprising a rotor magnet mounted on said elongated part and a stator electro-magnet mounted on said player and / or recorder such that said rotor magnet and said stator electro-magnet cooperate as an electric motor; and

centering means for positioning said fixing means in a central position when said driving means stops driving said data carrier.

10. (Amended) The device according to claim 9 wherein said rotor magnet is repulsed at a determined distance from said stator electro-magnet by magnetic forces when said driving means drives said data carrier.

11. (Amended) The device according to claim 9 wherein said elongated part has a point contact with said player and / or recorder such that a rotation axis of said fixing means passes through said point contact.

12. (Amended) A device for rotating inside of a disk player and / or recorder a disk shaped data carrier having an opening around a center of said disk shaped carrier, said device comprising:

fixing means for removably fixing said data carrier by inserting a part of

said fixing means in said opening;

driving means for generating a driving force to rotate said data carrier, said driving means being at least partly mechanically connected to said disk player and / or recorder, and comprising compressor means for generating a stream of air, and canalization means to direct said stream of air onto a surface disposed on said data carrier or said fixing means such that a driving force is transmitted to said data carrier which sets said data carrier into rotation and such that an air cushion lifts said data carrier and said fixing means thus reducing mechanical friction between said fixing means and said driving means; and

centering means for positioning said fixing means in a central position when said driving means stops driving said data carrier.

13. (Amended) The device according to claim 12 wherein

said canalization means comprises

a first tube, at one end of which said stream of air enters, and at another end of which a part of said stream of air exits, and

said fixing means comprises,

a second tube in which a part of said first tube including said another end of said first tube may be inserted, and

central openings for receiving said part of said stream of air and presenting said surface to said part of said stream of air.

14. (Amended) The device according to claim 13 wherein said central openings and said surface form a turbine or propeller.

15. (Amended) The device according to claim 12 wherein said canalization means comprises a multiplicity of nozzles, an end of each nozzle receiving a part of said stream of air and another end of each nozzle directing air to said data carrier which presents said surface to said part of said stream of air.

16. (Amended) The device according to claim 15 wherein said canalization means further comprises

a centering tube having an opening which receives a part of said stream of air, and nozzles which allow air to exit from an inside to a periphery of said centering tube, and

said fixing means comprises

a further centering tube into which a part of said centering tube including said nozzles may be fitted such that air flowing from said nozzles allows an air cushion to be preserved between an inner surface of said further centering tube and said centering tube.

Please add the following new claims 18-20.

18. (Newly Added) The device according to claim 10 wherein said elongated part has a point contact with said player and / or recorder such that a rotation axis of said fixing means passes through said point contact.

19. (Newly Added) The device according to claim 9 wherein said centering means comprises a conical recess which receives a tip shaped extremity from said fixing means, and is elastically mounted to said player and / or recorder.

20. (Newly Added) The device according to claim 12 wherein said centering means comprises a conical recess which receives a tip shaped extremity from said fixing means, and is elastically mounted to said player and / or recorder.

REMARKS

Claims 2, 4, 8-16, and 18-20 are pending. The claims have been amended to correct informalities and to conform with U.S. practice.

No fee is believed due in regard to the present preliminary amendment. However, if a fee is due, please charge the fee to Deposit Account 07-0832.

Respectfully Submitted
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Marked up version of the amended claims indicating additions and deletions:

2. (Amended) [A device according to claim 1] A device for rotating inside of a disk player and/or recorder a disk shaped data carrier having an opening around a center of said disk shaped carrier, said device comprising:

fixing means for removably fixing said data carrier by inserting a part of said fixing means in said opening, said fixing means having a rest position associated therewith;

driving means for rotating said data carrier by acting on said fixing means;

side moving means for allowing said fixing means to rotate about an axis of said rest position on a rotation plane substantially perpendicular to an axis of rotation of said fixing means; and

scanning means for scanning said data carrier, said scanning means being mechanically connected to said disk player and/or recorder such that said axis of rotation of said fixing means is able to move relative to said scanning means when said fixing means rotates about said axis of said rest position, wherein said side moving means [comprise] comprises

[•] sliding means [which allow to move] for allowing said driving means to move inside said player and / or recorder along directions which are parallel to said rotation plane, and

[• elastical] elongation means fixed at one end to said player and / or recorder and at another end to said driving means, such that said driving means [are positioned] is in a [determined] rest position [at least] when said driving means [stop] is not driving said data carrier.

4. [A] The device according to claim [3] 2 wherein said side moving means [comprise] comprises first bearing means, said first bearing means being mounted on said fixing means, and said disk and/or recorder comprises [at least] a supporting surface [being] disposed parallel to said rotation plane,

such that said first bearing means [allow] allows said fixing means to slide on said supporting surface while said fixing means [rotate] is rotating.

8. (Amended) [A] The device according to claim [1] 2, wherein said side moving means [comprise] comprises

[•] a sliding support having a drive opening through which said driving means [act] acts on said fixing means,

and said disk player and / or recorder comprises [at least]

[•] a supporting surface [being] disposed parallel to said rotation plane, such that said sliding support slides on said supporting surface,

said fixing means further comprising

[•] an elongated part fitted through said drive opening together with a second bearing means which allow said elongated part to rotate inside said drive opening, and said driving means comprising

[•] a rotor magnet mounted on said elongated part and a stator electro-magnet mounted on said player and / or recorder such that said rotor magnet and said stator electro-magnet cooperate as an electric motor,

said device further comprising

[•] centering means [which position] for positioning said fixing means in a central position [at least] when said driving means [stop] stops driving said data carrier.

9. (Amended) A device for rotating inside of a disk player and / or recorder a disk shaped data carrier having an opening around a center of said disk shaped carrier, said device comprising [at least] :

[•] fixing means [which allow to removably fix said disk] for removably fixing said data carrier by inserting a part of said fixing means in said opening, said fixing means comprising an elongated part[,] ;

[•] driving means [which rotate] for rotating said data carrier by acting on said fixing means, said driving means being at least partly mechanically connected to said disk player and / or recorder, and said

driving means comprising a rotor magnet [which is] mounted on said elongated part and a stator electro-magnet mounted on said player and / or recorder such that said rotor magnet and said stator electro-magnet cooperate as an electric motor[,] ; and

[•] centering means [which position] for positioning said fixing means in a central position [at least] when said driving means [stop] stops driving said data carrier.

10. (Amended) [A] The device according to claim 9 wherein said rotor magnet is repulsed at a determined distance from said stator electro-magnet by magnetic forces [at least] when said driving means [drive] drives said data carrier.

11. (Amended) [A] The device according to claim 9 [or 10] wherein said elongated part has a point contact with said player and / or recorder such that [said] a rotation axis of said fixing means passes through said point contact.

12. (Amended) A device for rotating inside of a disk player and / or recorder a disk shaped data carrier having an opening around a center of said disk shaped carrier, said device comprising [at least] :

[•] fixing means [which allow to removably fix said disk] for removably fixing said data carrier by inserting a part of said fixing means in said opening[,] ;

[•] driving means for generating a driving force to rotate said data carrier, said driving means being at least partly mechanically connected to said disk player and / or recorder, and comprising compressor means [to generate] for generating a stream of air, and canalization means to direct said stream of air onto a surface [which belongs to] disposed on said data carrier [and / or] or said fixing means such that a driving force is transmitted to said data carrier which sets said data carrier into rotation and such that an air cushion lifts said data carrier and said

fixing means thus reducing mechanical friction between said fixing means and said driving means[,] ; and

[•] centering means [which position] for positioning said fixing means in a central position [at least] when said driving means [stop] stops driving said data carrier.

13. (Amended) [A] The device according to claim 12 wherein

[•] said canalization means [comprise,] comprises

[•] a first tube, at one end of which said stream of air enters, and at another end of which [at least] a part of said stream of air exits, and

[•] said fixing means [comprise] comprises,

[•] a second tube in which [at least] a part of said first tube including said [other] another end of said first tube may be inserted, and

[•] central openings for receiving [at least] said part of said stream of air and [which present] presenting said [surfaces] surface to said part of said stream of air.

14. (Amended) [Device] The device according to claim 13 wherein said central openings and said [surfaces] surface form a turbine or propeller.

15. (Amended) [A] The device according to claim 12 wherein said canalization means [comprise] comprises a multiplicity of nozzles, an end of each nozzle receiving a part of said stream of air and another end of each nozzle directing air to said data carrier which presents said surface to said part of said stream of air.

16. (Amended) [A] The device according to claim 15 wherein

[•] said canalization means further [comprise] comprises

[•] a centering tube having an opening [of] which receives a part of said stream of air, and [which has further] nozzles which allow air to exit from an inside to a periphery of said centering tube, and [in that]

[•] said fixing means [comprise] comprises

[•] a further centering tube into which a part of said centering tube including said [further] nozzles may be fitted such that [the] air flowing from said [further] nozzles allows [to preserve] an air cushion to be preserved between an inner surface of said further centering tube and said centering tube.